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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,201	11/19/2004	Josef Beller	20 01 0496	9182

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OHLANDT, GREELEY, RUGGIERO & PERLE, LLP
ONE LANDMARK SQUARE, 10TH FLOOR
STAMFORD, CT 06901

EXAMINER

LEE, JOHN D

ART UNIT PAPER NUMBER

2874

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

6/1

Office Action Summary

Application No.

10/500,201

Applicant(s)

BELLER, JOSEF

Examiner

John D. Lee

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 14-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-12 and 14-19 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Applicant's communication submitted on August 10, 2006, has been carefully studied by the Examiner. The amendments have obviated the previously applied objections to the claims, as well as the previously applied 35 USC § 112 rejection. The arguments advanced therein, considered together with the amendments made to the claims, are persuasive and the rejections made of record in the previous Office action (based upon the Glingener et al reference) are hereby withdrawn. The Examiner agrees that it would not have been obvious to use the amplitude modulated pump signals PPS1-PPSn of Glingener et al as an input test signal for an OTDR system. In view of further search, however, and the consequent discovery of a relevant prior art document, new rejections are set forth below. This action is *not* made final.

The corrected sheet of drawing submitted on August 10, 2006, is acceptable.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, 8, 10-12, 14, and 15 are rejected under 35 U.S.C. § 102(a) as being clearly anticipated by newly cited U.S. Patent 6,587,607 to Aoki et al. Aoki et al discloses a measuring method which comprises combining first and second optical signals produced by lasers 1 and 2 to create a test signal which is input to optical fiber 7 and then to optical time domain reflectometer (OTDR) 9, for measuring the chromatic dispersion profile of optical fiber 7. The first and second optical signals produced by lasers 1 and 2 have different center wavelengths (column 4, lines 9-12). The two relationships expressed in claims 8 and 14 are inherent in the combinatorial coupling shown by Aoki et al (coupling efficiency being inversely proportional to the number of

signals; and the total coupled output power being the product of a single signal output power, the coupling efficiency, and the number of coupled signals). Any OTDR involves detection of a response signal (in the Aoki et al case, the response signal from the fiber 7 under test).

Claims 3-5, 7, 9, and 16-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over newly cited U.S. Patent 6,587,607 to Aoki et al. The particular illustrated embodiment of Aoki et al shows only two different wavelength optical signals to be combined as a test signal for OTDR detection. In column 6, line 5, of this reference, however, Aoki et al uses the terminology "light beams from at least two light sources". This language clearly suggests that a plurality of different wavelength optical signals can be combined as a test signal for OTDR detection. To have between 4 and 11 such signals in Aoki et al would thus have been obvious to the person of ordinary skill in the art. The particular wavelengths, and therefore the spacing between wavelengths, are not specified by Aoki et al as specific numerical values. The spacing is indicated as being between 5 and 10 nm (column 4, line 51). Various wavelengths are clearly intended. To have variable spacing distances between wavelengths, then, would certainly have been obvious. In column 5, lines 40-42, Aoki et al indicates that the intensity (i.e. the power) ratio of the first and second optical signals produced by lasers 1 and 2 may be adjusted to adjusted to approximately 2:1. This is an upper boundary of the adjustment range and, although not noted in the reference, it must be assumed that the lower boundary of the adjustment range is 1:1, which would represent equal optical powers for the first and second optical signals. Such equal power status

would thus have been obvious. Regarding applicant's claim 9, Aoki et al makes no mention about placing the disclosed method in the form of a computer program. Since just about any method can be adapted to computer form, and since there appears to be nothing unique about such adaptation of applicant's OTDR method, it would have been obvious to adapt the method of Aoki et al into the form of a computer program. Regarding applicant's claims 16-19, it was noted above that Aoki et al's desired spacing between wavelengths is between 5 and 10 nm, which is certainly less than 20 nm. Aoki et al does not indicate a spectral distribution value for the OTDR test signal, but it would clearly be similar to the wavelength distribution (separation) of the different wavelength optical signals to be combined. A spectral distribution value of less than or equal to about 20 nm would thus have been obvious to the person of ordinary skill.

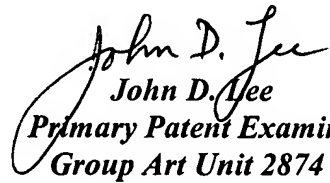
Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Aoki et al, the closest prior art of record, does not disclose or suggest the step of increasing the power level of at least one of the first and second optical signals until the OTDR test signal has a relevant nonlinear effect. Although a relevant nonlinear effect (four wave mixing) occurs in Aoki et al, there is no discussion of basing the onset of this effect on adjusted power levels.

Applicant's arguments with respect to the presently pending claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning the merits of this communication should be directed to Examiner John D. Lee at telephone number (571) 272-2351. The Examiner's normal

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work schedule is Tuesday through Friday, 6:30 AM to 5:00 PM. Any inquiry of a general or clerical nature (i.e. a request for a missing form or paper, etc.) should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562, to the technical support staff supervisor (Team 8) at telephone number (571) 272-1564, or to the Technology Center 2800 Customer Service Office at telephone number (571) 272-1626.


John D. Lee
Primary Patent Examiner
Group Art Unit 2874